1: Drew G-3 (1862-1872) 1875 AV1 Kashmir W. Tibetans AJ4

that it is impossible to say.* Another natural result has followed. The salts held in solution—which occur more or less in every source of water from the earth, and, as we saw by the supply of water not pure to the fresh-water lake, are here present in quantity—have become concentrated, and a Salt Lake is the result. The salts in this lake are indeed very much concentrated, and are ever being deposited from their solution. Some details about this must now be given.

The Salt Lake is shallow; at the eastern end I have heard that there is about 30 feet of water, in other parts I have not found more than six feet, while over a great space towards the western end there was but one foot of water; at that part the water was of a dirty yellow-brown colour; at the bottom of it was a quarter-inch cake of some alkaline salt, probably chiefly carbonate of soda; of this cake some was in a half-crystallized state, which was flexible like leather. There is an inlet in the northern shore of the lake, or rather there is a series of small lagoons separated from the main water by a bank of shingle and clay. Here the water, drying, deposits common salt, not indeed pure, but nearly enough so for it to be used for food. The salt is removed from this place by the Chāmpās, and fresh salt forms; the deposit is best and most plentiful when a good dry season succeeds the snow-melting. I saw four such pools separated from the lake and from each other. The water must ooze into them either from underneath or through the bar. As far as I know it is only in this part that common salt is deposited; the different salts in solution are thrown down in different parts, according to the degree of concentration; this last must depend on the shallowness and on currents; these again may be caused by the wind,

* I have here used the phrase "diminution, or reduction of humidity" rather vaguely. It does not follow that the reduction of precipitation between the above-defined epoch and the present time was as much as to one-eighth. One may suppose the precipitation to be *one-fourth* of what it was, and evaporation (area for area) to be twice what it was; this would account for the lake being one-eighth its former size. Or if the rate of evaporation has increased in the *same proportion* as precipitation has diminished, then $\frac{1}{\sqrt{8}}$, or nearly one-third, is the proportion. In general terms, however, it may be said that the climate is eight times as dry as before.

1: Drew G-3 (1862-1872) 1875 AV1 Kashmir
W. Tibetans AV4

which is apt to be regular at certain times of the day. The salt thus obtained has an admixture of magnesian salts; it is bitter to the taste, and is not liked by those who have been used to the pure salt of the Salt Range of the Panjāb; it is indeed apt to produce an itchiness on the skin. Still it is consumed all over Ladākh, and is carried as far as Kashmir. Over part of the plain, especially when it is composed of white clay, there is an efflorescence of some saline compound. Most generally it is carbonate of soda, which is called by the Rupshu people *pātsa*. Again, one sometimes sees a layer, over an area of a few square yards, of a hard colourless translucent substance, which seems to be a mixture of sulphate of magnesia with a compound of soda; of this the native name is *gurm*. There are certain curious inequalities in parts of the plain which should be mentioned and if possible accounted for. That part which lies on the north of the Salt Lake, as before said, is of white clay; the level of it is from 10 to 20 feet above the lake; on this plain we see many hollows, commonly from 10 to 40 yards across, and 10 to 15 feet deep, with, usually, gently-sloping sides; at the bottom is generally a crust or deposit of some salt, as of the *gurm*. One of these hollows was as much as 180 yards across; in this there was a little water. A somewhat different phenomenon is seen on the east of the fresh lake; there is a plain of similar white clay, from which rise small mounds of the same material to the height of about four feet; they seem to be bulgings up of the clay, for the laminæ curve over from the centre of each. Of these two phenomena I have not a clear explanation to offer, but I think there must be connected with them a certain sloping of the layers of the lacustrine deposit which I observed at two or three places. Towards the gorge the beds of fine sand before described are slightly waved, and dip on the whole to the north-north-east, at an angle of 8°. At the place where the salt is scraped up a cliff section shows the beds to be waving and sloping. These things are not due to any deep-seated ground-movements such as produce the dip of strata in general, but must be caused by some local settling, brought about perhaps by a dissolving out of salt that had been deposited.

1: Drew G-3 (1862-1872) 1875 AV1 Kashmir
W. Tibetans A14

133X tion of the origin of this lake, but I have turned over in my mind two or three hypotheses. The alluvium might at one time have filled the basin, which doubtless was originally but part of a valley tributary to that down which flows the stream; then, during some part of the glacial period, a glacier from the north-east may have scooped the hollow out of the gneiss and of the alluvium; thus the hollow would be a rock basin, counting the alluvium as part of the rock. Another theory is that at the time this tributary valley opened out to the larger one it was occupied by a glacier, and then the alluvium of the larger valley was deposited *against that glacier;* then, later, the ice disappearing left the hollow. The difficulty in the way of this is to know why no outlet was kept open by the water that must have flowed from the glacier. Altogether this little lake is about the most puzzling one I have met with.

INDUS VALLEY.

East of Tsomoriri there is a part of Rupshu which I have never visited—the valley of Hanle. It seems from the accounts to be another of these flat, high-level, alluvium-filled valleys, bounded by mountains which soon rise up to a height of 4000 or [361] 5000 feet or more above it. At Hanle, which is 14,276 feet high, [221] is a monastery built on a rocky spur some hundred feet above the plain. Passing by this tract, of which I have no personal knowledge, let us go to the Indus Valley, which, in the highest part of it included in the Maharaja's dominions, forms a portion of Rupshu, and is periodically visited by the Rupshu tribe with their flocks.

133X 487 From the south-east corner of the Salt Lake plain there leads a valley, which, followed up, brings one to an easy Pass, by name Folokonka, about 16,500 feet high, and beyond that one comes [317] into the valley of Pūga, a place where borax and sulphur are dug. The road from Tsomoriri, by the little lake Tso Kyāghar, also leads over a saddle of rock down into the Pūga Valley, which, farther followed down, brings us in a few miles to the Indus River. [221] The former of these two paths is the way taken by the Rupshu Chāmpās in the course of their migrations. The portion

¥585
¥539

The bird king did fly out to eat --
And we soon slipped through.

2. The wide, golden gap in the South
By a gold-colored door is closed.
On it hangs a gold dust seal,
With the gold frog's golden tooth.
No damage is on the tooth, forsooth,
And unharmed remained the seal.
Lake Ma-phan swelled. Then with his suite
The gold frog went out to get something to eat. --
And we in haste slipped through.

3. The wide, blue gap in the West
By turquoise-blue portal is closed.
Seal made of turquoise dust
With the proud peacock's tooth.
No damage is on the tooth, forsooth,
And unharmed remained the seal.
When Dug-gil-lo swelled, then with his suite
The peacock went to get something to eat. --
And we in haste slipped through.

4. The wide, black gap in the North
By a black-colored door is closed.
On it a seal of iron dust,
With the black raven's tooth.
No damage was done to the tooth, forsooth,
Unharmed did the seal remain.
When the Byan-pa-gor-sa grew,
Out for food went the ravens' crew. --
And we in haste slipped through.

The people:
Right. Listen with your ears!

/54/ Notes to XVa and b^{1}_{A}

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317

This song has a similar character to that of songs 1 and 2. The "proud /really: joyful, --Translator/ peacock" in stanza 3 corresponds to the "dancing peacock" of Indic poetry. With respect to the seal it should be observed that the Tibetans like to use lime in sealing. They do this by pressing a wooden signet into the lime. $\frac{2}{A}$ [See pp. 72-74--Analyst]

24:Peter E-5 (1938)1963 AJ4 West Tibetans AJ4
Ladak

The sexes divide agricultural work among themselves in such a way that the ploughing, transport and marketing of goods is done by the men, while the women milk the cows and *dzos*, feed them, sow and weed the fields. Trading further afield is the responsibility of the men, and, as everywhere in areas of Tibetan culture, they do not hesitate to undertake great journeys of many thousands of miles lasting months and in some cases years. Apricots are a great speciality of Ladak, exported in dry form far and wide, and enjoying a great reputation as being of the best variety.

Borax is produced in Rupchu, and salt comes from evaporation of the brackish waters of the lakes. There is a certain amount of gold, too, to be found in the rivers, and in some parts it is even mined, as it is further afield in the Ngari Korsum province of Tibet.

6. *Leh*

Leh (spelt *sLa* in Tibetan) is a large village situated at an altitude of 11,503 feet, in the Indus valley, some distance from the river, on the right bank, high up in a side valley, where the water from glacier formations above enters the ground to run subterraneously down to the main stream. Below it, close to the river bank, is Spituk (*sPitug*) with its ancient monastery on a stone hillock, dominating the plain.

The population of Leh is certainly much greater now than it was then. In 1938, it was only 2,377, and it was divided up into the same religious denominations as we have seen earlier for the whole of Ladak. There were 1,287 Buddhists (with the same reservations concerning low castes as before), 991 Mohammedans, 43 Sikhs Hindus and 56 Christians.

The Buddhists, it can be seen, constituted the vast majority. They were all those Ladakis of Tibetan affinity, whose mongoloid features made them immediately and easily recognizable. Among them, there were reported to be 650 men to 637 women.

The Moslems included Kashmiris from the valley, Turki, Uigur and Yarkandi traders from Sinkiang in Central Asia, Argons or those whose fathers had taken local Ladaki women as wives, and a few Baltis from the neighbouring sub-division. There were 447 men to 544 women in this religious community. Among the Hindus and Sikhs there were 30 men to 13 women. The community was only a temporary one made up of officials and employees of the Kashmir State. The Christians were all converts of the Moravian Mission, 31 men to 25 women. Leh is the principal station of this Mission in Western Tibet, with another station in Kalatse, lower down the Indus.